

Application Number 10/695,845
Response to Office Action mailed January 11, 2008

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REMARKS

This Amendment is responsive to the Office Action dated January 11, 2008. Applicant has amended claims 17, 36, and 39, and has cancelled claims 20 and 38 without prejudice. Applicant previously cancelled claims 1-16 and 21-35. As a result, claims 17-19, 36-37, and 39-44 are now pending.

Claim Rejections Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 17-20 and 36-44 under 35 U.S.C. 103(a) as being unpatentable over Sandmore et al. (US 6,059,760, hereinafter referred to as "Sandmore") alone or, in the alternative, Sandmore in view of Jones et al. (US 5,843,050, hereinafter referred to as "Jones"). Applicant respectfully traverses these rejections to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested any rational reason for their modification to arrive at the claimed inventions.

Applicant has amended independent claims 17 and 36. As now amended, each of these independent claims require, on a sidewall of a catheter or catheter assembly, one or more openings that are each angled towards a proximal end of the catheter or catheter assembly. These claims also require an elastic restrictor that, when operable, changes in size in response to a change in fluid flow to provide a variable amount of fluid force restriction, such that forces resulting from fluid flow out of the openings and out of the elastic restrictor are substantially balanced. The applied references fail to disclose or suggest all of these claim elements.

Applicant first notes that fluid outlets 100 disclosed in Sandmore (and as shown in FIGS. 13-14, for example) are located on a sidewall 102 of the cannula tip 45'. This location is distinct from that of the elastic restrictor recited in claims 17 and 36, which is located on an end of a tip section. Applicant further notes that the only opening on an end 104 of cannula tip 45' in Sandmore is tiny aperture 132, shown in FIGS. 13-14. However, Sandmore states that the end 104 is a substantially closed distal end 104 that prevents fluid from exiting therethrough.¹ Tiny

¹ Col. 8, lines 33-37 of Sandmore.

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aperture 132 is only provided to prevent air from becoming entrapped in the distal end of cannula tip 45'.²

Sandmore fails to disclose or suggest a catheter or catheter assembly having, on a sidewall, one or more openings arranged such that forces resulting from fluid flow out of the openings and out of the elastic restrictor are substantially balanced, as required by claims 17 and 36, as amended. With regard to this particular claim element, the Examiner has referred to columns 8-9 of Sandmore. However, columns 8-9 of Sandmore make it clear that substantially closed end 104 of the cannula tip 45', which includes tiny aperture 132, prevents fluid from exiting therethrough. Tiny aperture 132 is only provided to prevent air from becoming entrapped in the distal end of cannula tip 45'. Therefore, only fluid outlets 100 of Sandmore are capable of allowing fluid to exit therethrough. Fluid outlets 100 extend toward the proximal end 116 and reverse the flow of fluid exiting from the cannula tip 45'.³

Therefore, because fluid exits only out of fluid outlets 100 in Sandmore, and is not capable of exiting out of tiny aperture 132, Applicant submits that the forces resulting from fluid flow out of fluid outlets 100 **cannot** be substantially balanced. In other words, forces resulting from fluid flow out of these outlets 100 cannot be substantially balanced, because no fluid exits out of tiny aperture 132, and there is therefore no forward force component resulting from fluid flow out of tiny aperture 132. Thus, for at least these reasons, Sandmore does not disclose or suggest each and every element of amended claims 17 and 36.

Applicant further submits that Jones does not overcome the shortcomings of Sandmore. Jones also fails to disclose or suggest one or more openings, on a sidewall of a catheter or catheter assembly, that are each angled towards a proximal end of the catheter or catheter assembly, and an elastic restrictor that, when operable, changes in size in response to a change in fluid flow to provide a variable amount of fluid force restriction, such that forces resulting from fluid flow out of the openings and out of the elastic restrictor are substantially balanced, as required by amended claims 17 and 36. In the Office Action, the Examiner referred to Figures 5 and 7, along with lines 14-63 of column 11, of Jones. These portions of Jones disclose an aperture 88 on a distal segment 72. Aperture 88 accommodates a guidewire to pass

² Id. See also FIG. 14 of Sandmore.

³ Col. 8, lines 11-13 of Sandmore.

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therethrough.⁴ While aperture 88 may permit the escape of pressurized media, such as contrast media or medication, only a relatively small volume of fluid may flow through aperture 88 in order to prevent stagnation in the vessel at the distal end of the catheter.⁵ Most of the fluid exiting distal segment 72 flows out of a plurality of lateral apertures 74.⁶ Applicant submits that forces resulting from fluid flow out of these lateral apertures 74 and out of aperture 88 cannot be substantially balanced. Firstly, the majority of the fluid flows out of apertures 74, while only a minimal amount may exit aperture 88. In addition, it appears from the disclosure of Jones that fluid exits out of lateral apertures 74 in directions substantially **perpendicular** to the direction of flow of the small volume of fluid that may flow out of aperture 88. In this case, it would not be possible for the forces resulting from fluid flow out of the lateral apertures 74 and aperture 88 to be substantially balanced, because there are no rearward force components resulting from the fluid flow out of lateral apertures 74. Thus, for at least these reasons, Jones does not disclose or suggest each and every element of amended claims 17 and 36.

Claims 18-19, 37, and 39-44 depend, either directly or indirectly, on either claim 17 or 36. For at least the reasons outlined above, Applicant submits that neither Sandmore nor Jones, alone or in combination, disclose or suggest each and every element of these dependent claims.

Therefore, for at least these reasons, Applicant respectfully submits that the applied references fail to establish a prima facie case for non-patentability of Applicant's claims 17-19, 36-37, and 39-44 under 35 U.S.C. 103(a). Withdrawal of the rejections to these claims is respectfully requested.

⁴ Col. 11, lines 45-51 of Jones.

⁵ See col. 10, lines 60-64 and col. 11, lines 21-22 of Jones.

⁶ See, e.g., FIG. 5 of Jones.

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CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Although Applicant has focused the arguments above on specific claims, Applicant does not acquiesce to any of the rejections of dependent claims that are not specifically discussed. Applicant reserves further comment on any such claims, and reserves the right to present additional arguments on any of the pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

April 10, 2008

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